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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/658,758 | 09/10/2003 | Jun Kawahara | 112244.01 | 3919 |
| 25944 | 7590 | 06/27/2005 | EXAMINER | |
| OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320 | | | XU, LING X | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1775 | |

DATE MAILED: 06/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/658,758

Applicant(s)

KAWAHARA ET AL.

Examiner

Ling X. Xu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 7 and 9-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7 and 9-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Response to Amendment

1. Applicant's amendments filed on 5/20/2005 have been entered.

Claims

2. It is suggested that claim 10, line 2, to be changed to -- wherein the charged polymer gel is a particle form and has a spherical shape--

Claim Rejections - 35 USC § 102

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-3, 7, 9 and 11-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Nishimura et al. (US 4,779,962).

With respect to claims 1-3 and 11-13, Nishimura discloses an optical device comprises a gel-containing liquid layer and one pair of electrodes. The gel-liquid layer comprises a liquid and a liquid-absorbable and releasable polymer that absorbs and releases a liquid under the action of an electric field (Col. 2, lines 10-20). The gel is fixed to one of the electrodes (Col. 3, lines 44-46).

Nishimura also discloses that the liquid to be filled in the gel-containing liquid layer includes water, dimethylformamide, dimethylsulfoxide and dimethylacetamide, methol, or ethanol (Col. 2, lines 60-65) (the "insulating liquid" as recited in claim 2).

Nishimura also discloses that the liquid-absorbable and releasable polymer is the polymer which will change its volume by absorbing or releasing the liquid (Col. 2, lines 32-60).

Examples of this polymer are electrically chargeable polymers obtained from an acrylamide derivative as the main component (the “non-ionic polymer gel” of the charged polymer gel). The gel composition also includes ammonium persulfate (ammonium salt, the “charging agent” as recited in claims 5-6) (Col. 6, lines 40-45 and Examples).

Because Nishimura discloses the same insulating liquid as disclosed in the present application (see page 17 of the Specification), the same liquid would also have the same properties as claimed, such as volumetric resistivity as recited in claim 3.

With respect to claims 7 and 9, Nishimura discloses the use of coloring material such as dyes and pigments (Col. 3, lines 4-15) in the gel composition (the “light controlling material” as pigment as recited in claims 7-9).

Accordingly, Nishimura meets all the limitations of claims 1-3, 7, 9 and 11-13.

4. Claims 1-3, 7 and 9-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Akashi et al. (US 6,287,485).

With respect to claim 1, Akashi discloses a volume-modulation color producing composition comprises a polymer gel, a pigment (the “light controlling material” as recited in claims 7-9) and a liquid. The polymer gel is capable of swelling-contracting by absorbing or desorbing a liquid when an external stimulus, such as electric field, is given (abstract).

With respect to claims 2-3, 7 and 9, Akashi discloses that the liquid used in the composition includes water, alcohol, dimethylformamide, dimethylacetamide and

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dimethylsulfoxide (Col. 10, lines 60-67). Because Akashi discloses the same insulating liquid as disclosed in the present application (see page 17 of the Specification), the same liquid would also have the same properties as claimed, such as volumetric resistivity as recited in claim 3.

Akashi also discloses that example of the polymer gel may be cross-linked polyvinylcarbazole, or cross-linked polystyrene (the “non-ionic polymer”) (col. 6, lines 50-67).

Akashi also discloses some pigments, which is considered to be a light controlling material and has the same function as the claimed charging agent (Col. 8, lines 5-20).

With respect to claim 10, Akashi discloses that the polymer gel can be in the state of particles with spherical shape (Col. 10, lines 15-25).

With respect to claims 11-13, Akashi discloses an optical element comprises a pair of electrodes where the color producing composition comprising the charged polymer gel is fixed on the electrode (Col. 12, lines 45-67 and FIG. 2).

Accordingly, Akashi meets all the limitations of claims 1-3, 7, and 9-13.

Response to Arguments

5. Applicant's arguments filed 5/20/2005 have been fully considered but they are not persuasive.

Applicant argues that Nishimura discloses electrically chargeable, ionic polymer including a charging agent but not non-ionic charged polymer gels including a charging agent as set forth in claims 1 and 11.

As stated above and in the prior Office action, Nishimura clearly discloses the use of non-ionic charged polymer gel. Nishimura discloses that the liquid-absorbable and releasable

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polymer is the polymer which will change its volume by absorbing or releasing the liquid (Col. 2, lines 32-60). Examples of this polymer are electrically chargeable polymers obtained from an acrylamide derivative as the main component (the “non-ionic polymer gel” of the charged polymer gel). The gel composition also includes ammonium persulfate (ammonium salt, the “charging agent” as recited in claims 5-6) (Col. 6, lines 40-45 and Examples).

The acrylamide derivatives disclosed in Nishimura are the same non-ionic polymers used in the present application, see the list of the examples of non-ionic polymers on page 10 of the specification. Accordingly, Nishimura does teach the use of non-ionic polymers for the polymer gel composition as claimed.

Applicant also argues that Akashi does not disclose non-ionic polymer gels including a charging agent, as set forth in claims 1 and 11.

As stated above and in the prior Office action, Akashi discloses that the examples of the polymer gel may be cross-linked polyvinylcarbazole, or cross-linked polystyrene (the “non-ionic polymer”) in response to electric field or electrically induced stimuli (col. 6, lines 50-67).

The across-linked polycarbazole and polystyrene disclosed in Akashi are the same non-ionic polymers used in the present application, see the list of the examples of non-ionic polymers on page 10 of the specification. Accordingly, Akashi does teach the use of non-ionic polymers for the polymer gel composition as claimed.

Conclusion

6. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling X. Xu whose telephone number is 571-272-1546. The examiner can normally be reached on 8:00 - 4:30 Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah D. Jones can be reached on 571-272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ling X. Xu
Examiner
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